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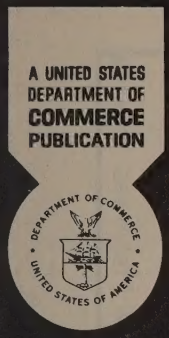

Current Economic Analysis

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service

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INDUSTRIAL FISHERY PRODUCTS

SITUATION AND OUTLOOK

Division of
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Analysis
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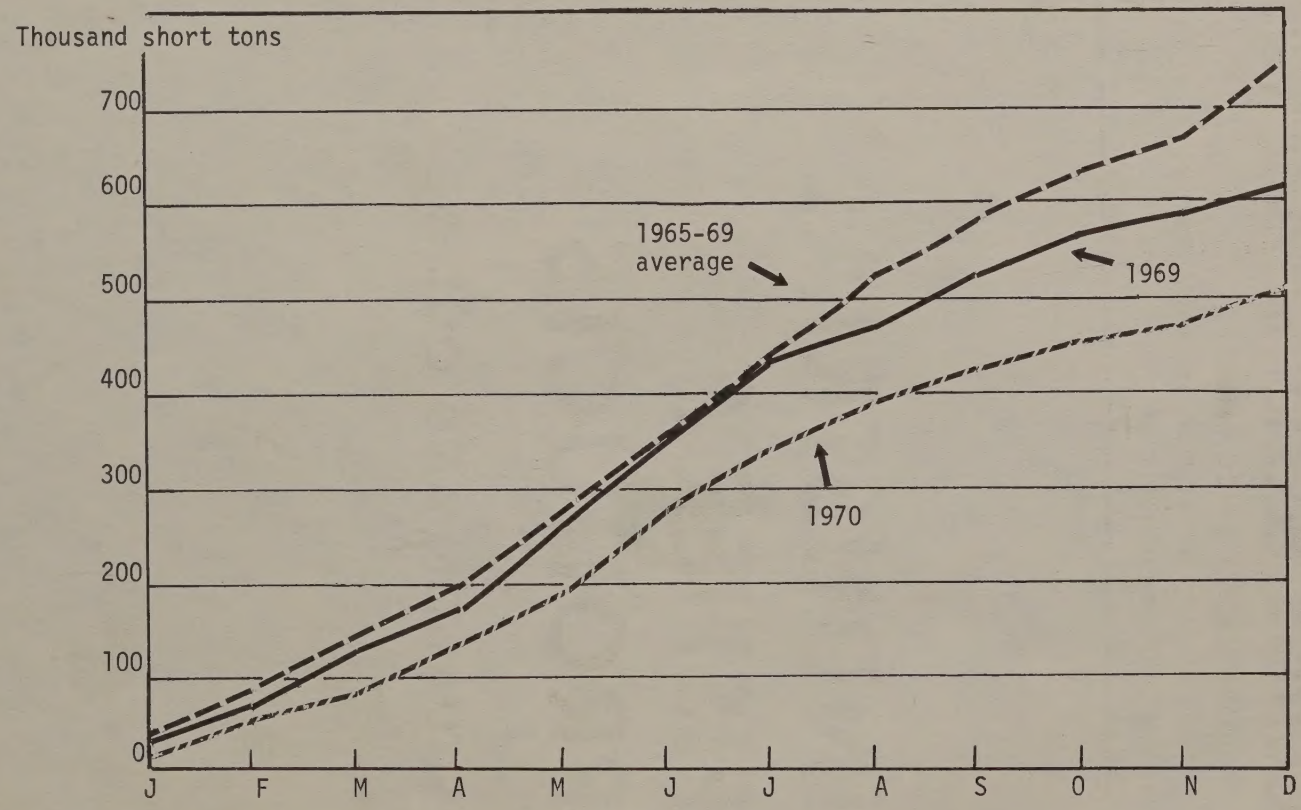
CUMULATIVE MONTHLY SUPPLIES* OF FISH MEAL IN THE UNITED STATES, 1965-69 AVERAGE, 1969, AND 1970



*Includes domestic production and imports.

U.S. Department of Commerce Neg. Econ. 441-71(1) National Marine Fisheries Service

Figure 1

INDUSTRIAL FISHERY PRODUCTS SITUATION AND OUTLOOK

Approved by the

National Marine Fisheries Service
Situation
and Outlook Board

February 3, 1971

Division of Current
Economic Analysis

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SUMMARY

FISH MEAL

The total amount of fish meal available in the United States in January-October 1970 was 458,300 tons 1/—down 19 percent from 1969 and down 28 percent from the 1965-69 average for that 10-month period. The domestic production of 235,000 tons was up 6 percent from the same period of 1969, but imports of 223,200 tons were down 35 percent. The main reason for low imports can be attributed to the continued high prices of fish meal in the world market. Peru, the world's leading producer of fish meal, exports fish meal solely through the Government sales organization, EPCHAP (Empresa Publica de Comercializacion de Harina y Aceite de Pescado). This organization has maintained high prices for fish meal since it took over fish meal marketing in May 1970.

Total FEO 2/ exports of fish meal were down the first 10 months of 1970, although production was 26 percent above a year before. Nearly 7 percent of the FEO exports went to the United States in January-October 1970—a considerably smaller share than in 1969. The relative exports to EEC 3/ countries were 41 percent of the total FEO exports—about the same as in 1969. FEO fish meal exports to East European countries in January-October 1970 increased from the previous year. Their share of the total FEO exports was 17 percent—compared to 12 percent a year before.

1/Short tons are used in this report, unless otherwise specified.

2/Fishmeal Exporters Organization: member countries are Angola, Chile, Iceland, Norway, Peru, So Africa, and South West Africa.

3/European Economic Community: member countries are Belgium, France, West Germany, Italy, Luxemburg, and the Netherlands

The member countries of FEO held an estimated 750,900 metric tons (827,700 short tons) of fish meal on November 1, 1970,—more than double the stocks held at the same date in 1969. Peru held about 72 percent of the November 1 stocks.

The U.S. broiler placements in January-October 1970 were about 9 percent above the placements a year before, but apparent use of fish meal remained below the 1969 level. The main reason for the low use of fish meal was relatively high prices of fish meal compared to the prices of competing feed ingredients.

The weighted average price of menhaden meal in 1970 was $184.80 per ton, f.o.b. East Coast points, and the average price of Peruvian fish meal was $196.50 per ton, East Coast ports. The ratio between the price of Peruvian fish meal and the price of soybean meal, a major competitor, averaged 2.26 : 1. During the first 2 weeks in January, the ratio was slightly lower, 2.15 : 1. If this relatively high price ratio continues, we expect the fish meal use in the United States during the first quarter of 1971 to be less than in the first 3 months of 1970. If the ratio between prices of fish meal and soybean meal drops to an average of 2.00 : 1 during January-March, we estimate that about 75,000 tons of fish meal—same as a year ago--will be used in the United States during the first quarter of 1971.

We estimate domestic production for January-March to be near last year's January-March production of 13,900 tons. The size of U.S. fish meal imports depends greatly on the price development in Peru. The record high stocks in Peru tend to depress fish meal prices, but it is possible that the Peruvian Government wants to learn what the size of the 1971 anchovy year-class is going to be before making significant price decisions. The size of the 1971 anchovy year-class can be estimated in March or April.

FISH SOLUBLES

The total amount of fish solubles available for use in the United States in January-October 1970 was 91,100 tons—23 percent more than a year before. Nearly all of the fish solubles were produced domestically; only 424 tons of fish solubles were imported.

Prices of menhaden solubles, as quoted by brokers in New York City, declined from an average of $54.70 per ton in May to $48.70 per ton in September and then increased slightly in October and November.

Because the prices of fish solubles were attractive in comparison with competing feed ingredients, the apparent consumption of solubles increased above the previous year.

The use of fish solubles in the first quarter of 1971 will be influenced by the differences between the prices of fish meal and fish solubles. If this margin continues at the same level as it was at the beginning of the year, feed mixers probably will tend to use more solubles during the first quarter of 1971 than a year ago. We expect the domestic production of fish solubles to be about the same as the 4,700 tons produced in the first quarter a year ago. Imports will likely supplement the domestic production.

FISH OIL

The United States produced about 190.6 million pounds of fish oil in January-October 1970—22 percent more than during the same period in 1969. About 27.5 million pounds of fish oil were used—slightly less than during the same period a year before. Exports were 136 million pounds—about the same as in January-October 1969 but up about 62 percent from the 1965-69 average exports for the same period. The share going to the Netherlands, the major market for U.S. fish oil, declined from the previous year while Norway, a net fish oil exporter, took 27 percent of United States exports of fish oil.

The weighted annual average price of menhaden oil in 1970 was 10.15 cents per pound—the highest annual average in our records. Strong European demand for fish oil was the main reason for increased exports and high prices.

The current ratios between the price of menhaden oil and the prices of competing oils suggest that the domestic use of fish oil during January-March 1971 likely will remain below last year's first quarter use of 8.4 million pounds. U.S. production of fish oil in the first quarter is usually very

light. We estimate the domestic production of fish oil in January-March to be about the same as last year's 1.9 million pounds. Although inventories of fish oil were estimated to be somewhat higher in January 1, 1971, than the very low stocks a year ago, they were considerably down from the most recent 5-year average for January 1. Since indications are that the high demand continues, the U.S. fish oil exports during the first quarter will depend mainly on the available quantity of fish oil.

THE VALUE OF PROCESSED MENHADEN

In 1970, the total value of the U.S. production of menhaden meal, solubles, and oil amounted to an estimated $56 million—up 45 percent from the 1969 value. High prices for meal and oil and high landings of menhaden were responsible for this record. About 62 percent of the value of processed menhaden was attributed to meal, nearly 31 percent to oil, and about 7 percent to solubles.

FISH MEAL

REVIEW: JANUARY-OCTOBER 1970

Supply

Fish Meal Supplies in January-October—Down 19 Percent From 1969

Total supplies of fish meal in the United States in January-October 1970 were 458,300 tons–down 19 percent from 1969 and down 28 percent from the 1965-69 average for January-October (table 1 and fig. 1). During this period, supplies for each month were below the corresponding months a year ago. The decrease in total supplies was mainly due to the reduction in U.S. imports. Imports provided about 49 percent of the total supplies in January-October 1970—compared to 61 percent in 1969 and the 1965-69 average of 69 percent.

Production in January-October 1970—Up 6 Percent From 1969

The United States produced about 235,000 tons of fish meal in January-October 1970—up 6 percent from 1969 and up 17 percent from the 1965-69 average (tables 2 and 3). Meal produced from menhaden was 180,500 tons, or more than three-fourths of the January-October production of fish meal. During the same period a year ago, menhaden accounted for two-thirds of the total production of fish meal (table 3). The Gulf Coast area produced 71 percent of the menhaden meal in January-October 1970—compared to 81 percent a year ago (table 4).

Table 1.--Total fish meal available in the United States: production plus imports, by month, 1968-70 1/

Month	1968	1969 2/	1970 2/
	Thousand short tons		
January	93.4	30.0	24.4
February	51.8	31.5	25.9
March	59.2	49.9	24.6
April	74.1	72.7	61.8
May	89.5	76.9	61.6
June	111.7	88.9	80.9
July	136.0	77.0	61.4
August	123.6	51.8	49.4
September	78.9	45.1	39.8
October	69.0	38.8	28.5
November	85.0	19.3	17.6
December	110.2	20.5	29.9
Total 3/	1,082.3	602.5	505.7

1/Excludes meal made from shellfish.
2/Preliminary.
3/Figures may not add to total because of rounding.

Table 2.--U.S. production of fish meal by month, 1968-70 1/

Month	1968	1969 2/	1970 2/
	Thousand short tons		
January	2.5	2.8	4.3
February	2.7	3.8	4.5
March	4.5	4.7	5.2
April	11.8	14.7	6.9
May	19.1	31.8	26.9
June	30.8	35.4	47.3
July	44.3	40.2	51.2
August	36.2	33.3	39.1
September	29.6	35.9	28.9
October	20.2	19.1	20.8
November	14.3	12.7	11.6
December	11.0	9.5	7.6
Total 3/	227.0	244.1	254.2

1/Excludes meal made from shellfish.
2/Preliminary.
3/Figures may not add to total because of rounding.

Table 3.--U.S. production of fish meal by raw material source, January-October, 1965-69 average, 1969, and 1970

Source	1965-69 average	1969	1970 1/	Percent of total production: 1965-69 average	1969	1970
	Thousand short tons			Percent		
Menhaden 2/	130.6	148.9	180.5	65.2	67.1	76.8
Tuna, mackerel, and anchovies	24.7	29.4	35.3	12.3	13.2	15.0
Unclassified	45.0	43.7	19.2	22.5	19.7	8.2
Total	200.3	222.0	235.0	100.0	100.0	100.0

1/Preliminary.
2/Includes a small quantity of other species.

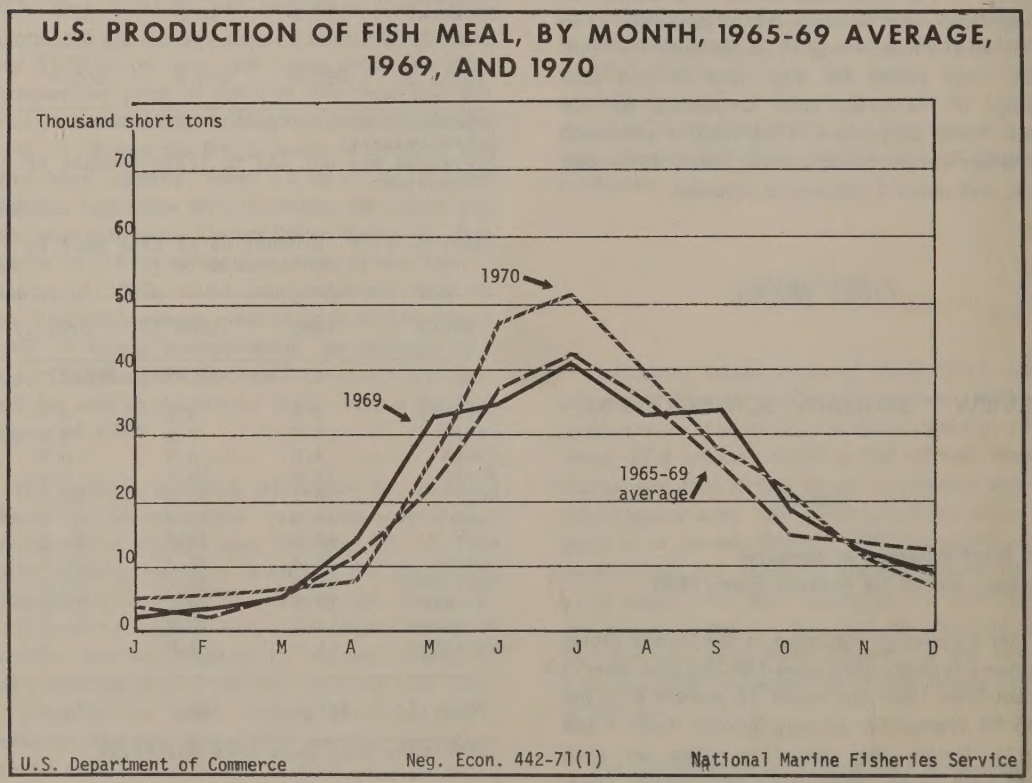

Figure 2

This shift in the percentage share of production between Gulf and Atlantic Coasts was due to a notable increase in menhaden meal production of Atlantic Coast plants. These plants produced about 52,200 tons during the first 10 months of 1970—compared to 28,400 tons a year ago. The average January-October production of the plants in Atlantic Coast areas was 36,900 tons during the most recent 5-year period.

Landings of menhaden in January-October 1970 were the highest since 1962 and amounted to 1,730.9 million pounds—22 percent over landings of the same period in 1969 and 40 percent more than the 1965-69 average. Atlantic Coast landings were 499.4 million pounds, nearly double the landings of a year ago. On the Gulf Coast, where the menhaden fishing season ended in October, landings totaled 1,230.9 million pounds—up about 7 percent from 1969.

Table 4.--Production of menhaden meal by area and by month, 1968-70 1/

Month	1968	1969 2/	1970 2/
	Thousand short tons		
	Atlantic Coast		
January	-	-	-
February	-	-	-
March	-	-	-
April	1.0	3/	
May	2.7	2.4	4.3
June	7.1	4.7	14.4
July	10.9	6.0	9.4
August	7.1	4.7	9.2
September	4.9	3.2	8.0
October	8.3	7.2	6.2
November	9.2	7.1	5.8
December	6.2	3.5	
Total 4/	57.5	39.0	
	Gulf Coast		
January	-	-	-
February	-	-	-
March	-	-	-
April	3.2	4.8	2.7
May	8.6	20.7	17.1
June	15.4	23.3	28.2
July	21.7	26.3	36.2
August	18.4	19.3	24.1
September	14.4	22.7	13.8
October	4.0	3.6	6.2
November	-	-	-
December	-	-	-
Total 4/	85.7	120.5	
	Total 4/		
January	-	-	-
February	-	-	-
March	-	-	-
April	4.3	4.8	3.4
May	11.4	23.1	21.5
June	22.4	28.0	42.6
July	32.6	32.3	45.6
August	25.4	24.0	33.3
September	19.3	25.9	21.7
October	12.4	10.8	12.4
November	9.2	7.1	5.8
December	6.2	3.5	
Total 4/	143.2	159.5	

1/Includes a small amount of meal from other species.
2/Preliminary.
3/Data combined with Gulf Coast to avoid disclosing figures for individual companies
4/Figures may not add to total because of rounding.

Menhaden landings on the Atlantic Coast in November-December were only 77.4 million pounds—down 23 percent from the same months a year before. November-December catch of the North Carolina menhaden fishery was less than half of the catch during that period a year ago.

About 35,300 tons of fish meal were produced from anchovies and tuna and mackerel scrap in January-October 1970—up 20 percent from 1969 and up 43 percent from 1965-69 average. One reason for the higher production is the increase in the landings of the reduction fishery for California anchovies. Anchovy landings from January to October 1970 were 59,700 tons—up about 85 percent from 1969. This figure includes August-October landings of the 1970-71 season and the last half of the 1969-70 season, which was the most successful of the five reduction seasons. The 1970-71 season began August 1 for the Northern Permit Area and September 15 for the Southern Permit Area. Landings through January 17, 1971 totaled 63,000 tons--up about 7 percent from the same period a year ago. The season is scheduled to close May 15, 1971, and a statewide closure on taking anchovies was imposed for February. The season quota is 110,000 tons.

Imports of Fish Meal—Lowest Since 1962

The United States imported 223,200 tons of fish meal in January-October 1970—down 35 percent from the imports in the same period a year ago and down 49 percent from 1965-69 average (tables 6 and 7). With the exception of September, imports were lower than last year in each month from January through October (fig. 3). The main reason for low imports can be attributed to the continued high prices, causing feed mixers to use relatively low quantities of fish meal.

United States fish meal imports from Peru during the first 10 months of 1970 were 135,200 tons, 36 percent less than during the same period last year and less than half of the 1965-69 average (fig. 5). There were no imports from Peru in September and October. These are the only months since the anchovy fishery began in the late 1950's that the United States has imported no fish meal from Peru. Peru's share of the total United States fish meal imports in January-October 1970 was about 61 percent—compared to 62 percent in 1969 and a 1965-69 average of about 70 percent (table 7)

Table 5.--Menhaden landings by area, January-October, 1965-69 average, 1969, and 1970

Area	1965-69 average	1969	1970 1/	Percent of total menhaden landings: 1965-69 average	1969	1970
	Million pounds			Percent		
Atlantic Coast	336.4	261.4	499.4	27.2	18.5	28.9
Gulf Coast	898.4	1,154.9	1,230.9	72.8	81.5	71.1
Total U.S. 2/	1,234.9	1,416.3	1,730.3	100.0	100.0	100.0

1/Preliminary.
2/Figures may not add to total because of rounding.

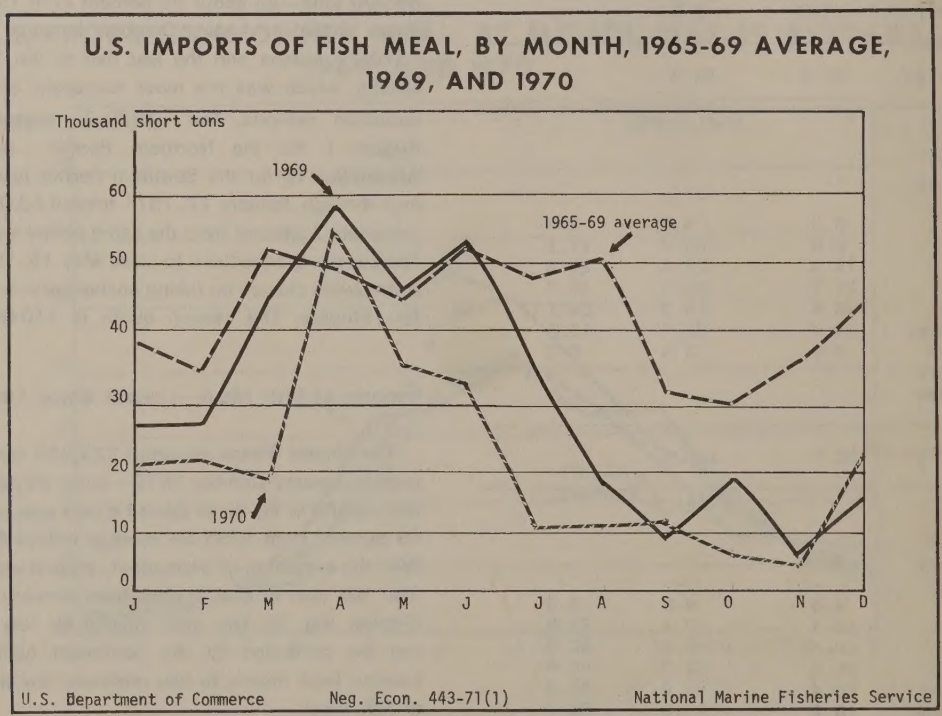

Figure 3

About 65,200 tons of fish meal came from Canada during January-October 1970—up 9 percent from 1969 and up 41 percent from 1965-69 average of the same period. From July through October, Canada was the major source of United States imports of fish meal.

Chile shipped only 11,600 tons of fish meal to the United States in January-October 1970—one-fifth of the quantity a year ago. Chilean fish meal exports were hampered by low landings and a dispute regarding ocean freight rates for fish meal. During the 10-month period, fish meal from Chile came to the United States in March, April, and May only.

The United States imported about 9,200 tons of fish meal from Norway during January-October 1970—up about 39 percent from 1969, but only about one-third of the 1965-69 average. The average fish meal imports from Norway in the 1965-69 January-October period were 27,800 tons.

Table 6.--U.S. imports of fish meal by month, 1968-70

Month	1968	1969	1970 1/
	Thousand short tons		
January	90.9	27.2	20.1
February	49.0	27.6	21.4
March	54.7	45.2	19.4
April	62.3	58.0	54.9
May	70.4	45.1	34.7
June	80.9	53.6	33.5
July	91.7	36.8	10.2
August	87.4	18.3	10.3
September	49.3	9.3	10.9
October	48.8	19.7	7.8
November	70.7	6.6	6.0
December	99.3	11.0	22.3
Total 2/	855.3	358.4	251.5

1/Preliminary.
2/Figures may not add to total because of rounding.

World Fish Meal Production in January-October—Up From 1969

World production of fish meal in January-October was an estimated 3,274,200 metric tons (3,609,200 short tons)—up 19 percent from 1969 and up 18 percent from the 1965-69 average for January-October (table 9). These comparisons do not include Mainland China, Japan, or the U.S.S.R. The major countries producing more in January-October 1970 than a year before were Denmark, Norway, Peru, and the United States. Canadian fish meal production during the first 10 months of 1970 was 8 percent below a year ago. Most of the increase in the world production was in FEO countries.

About 83 percent of the estimated world fish meal in January-October 1970 was made by FEO countries—compared to about 78 percent during the period a year before (table 9). Peru alone produced 57 percent of the world's fish meal—compared to 44 percent in the same period in 1969. The United States made about 7 percent of the estimated world fish meal in the first 10 months of 1970—about the same percentage as a year before.

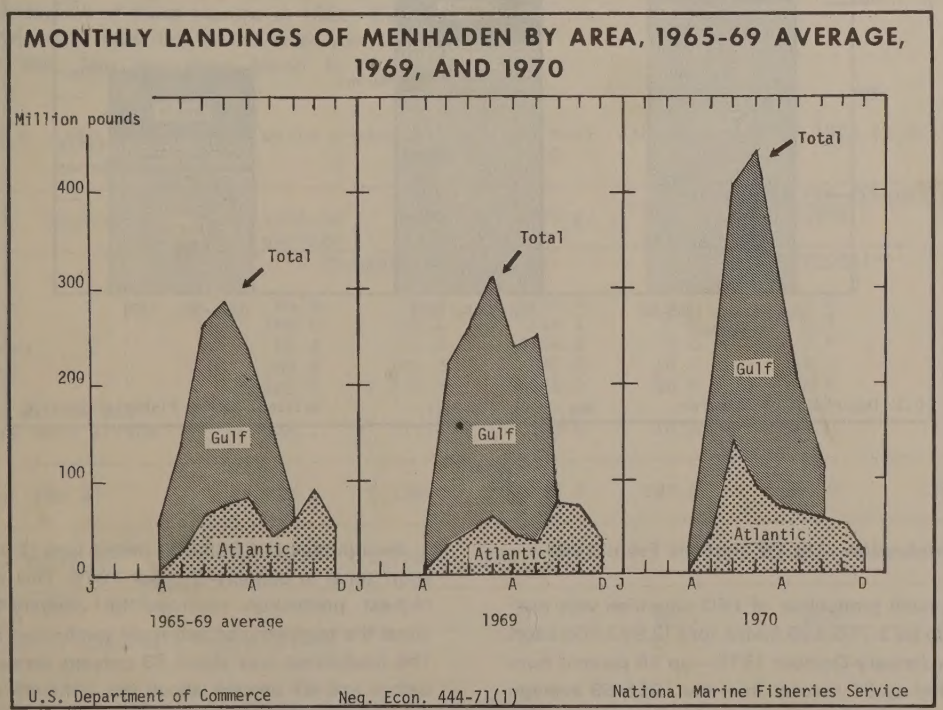

Figure 4

Table 7.--U.S. imports of fish meal by country of origin, January-October, 1965-69 average, 1969, and 1970

Country of origin	1965-69 average	1969	1970	Percent of total imports: 1965-69 average	1969	1970
	Thousand short tons			Percent		
Canada	46.3	59.9	65.2	10.6	17.6	29.2
Chile	50.1	58.9	11.6	11.5	17.3	5.2
Norway	27.8	6.6	9.2	6.4	1.9	4.1
Peru	303.7	211.2	135.2	69.7	62.0	60.6
Other	8.0	4.2	2.0	1.8	1.2	0.9
Total 1/	435.9	340.8	223.2	100.0	100.0	100.0

1/Figures may not add to total because of rounding.

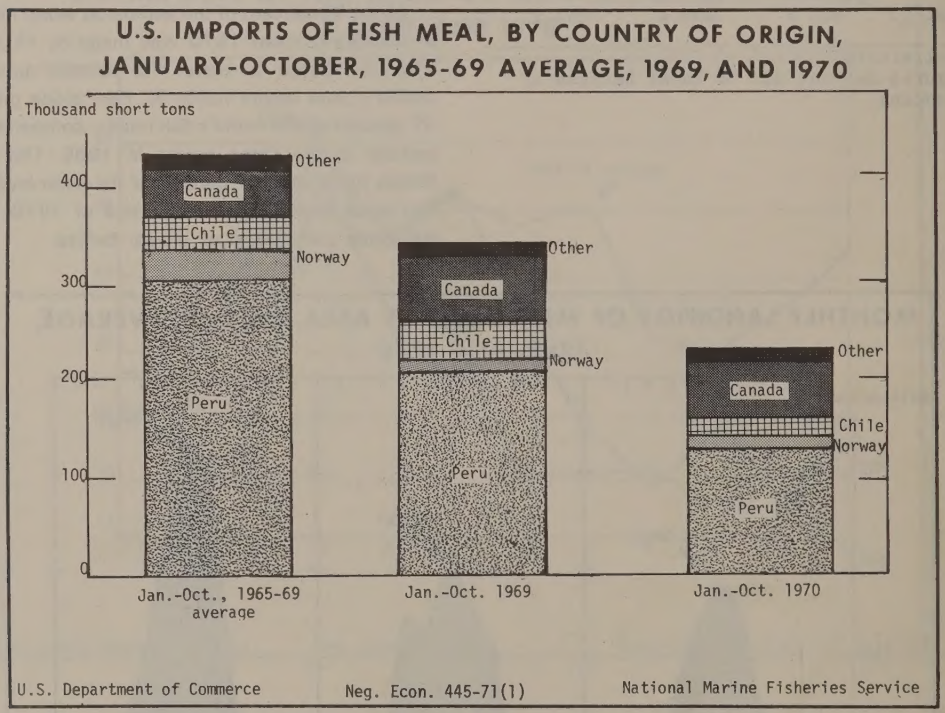

Figure 5

FEO Production—Up 26 Percent From 1969

Fish meal production of FEO countries was estimated to be 2,715,300 metric tons (2,993,100 short tons) in January-October 1970—up 26 percent from 1969 and up 22 percent from the 1965-69 average for the 10-month period (table 9). The increase was attributed mainly to the Peruvian production.

Peru produced 1,866,000 metric tons (2,057,000 short tons) in January-October 1970. This was the highest production recorded for January-October since the beginning of fish meal production in Peru. The production was about 53 percent above a year before and 47 percent above the 1965-69 average for this period. Peru's share in FEO fish meal production was about 69 percent in 1970—compared

Table 8.--U.S. imports of fish meal as a percent of total fish meal available in the United States, by month, 1968-70 1/

Month	1968	1969	1970
		Percent	
January	97.3	90.7	82.4
February	94.6	87.6	82.3
March	92.4	90.6	78.9
April	84.2	79.8	88.8
May	78.7	58.6	56.3
June	72.5	60.3	41.4
July	67.4	47.8	16.6
August	70.7	35.3	20.8
September	62.5	20.6	27.3
October	70.7	50.8	27.2
November	83.3	34.2	34.1
December	90.1	53.7	74.6
Average 2/:	79.0	59.5	49.7

1/Production and imports.
2/Weighted average.

to about 57 percent in 1969. Before the close of the fishing season on May 31, Peru's production was running about 31 percent above the previous year. At the beginning of the new season, in September and October, fish meal production was about 2.5 times the production of these months in 1969. The high anchovy catch was due to the large year-class of 1969 fish. This year-class lasted for a much longer time than usual, up to the end of October; the catch was high, because the 1969 year-class was fished together with the 1970 year-class. Usually the previous year's class is finished by the end of May.

Norway's fish meal production of 345,500 metric tons (380,800 short tons) in January-October 1970 was 13 percent more than the 1969 production. The Norwegian catch of fish for industrial production in January-October 1970 was about 21 percent greater than during the same period in 1969. The increase was mainly due to the large catch of capelin—up 83 percent from 1969—and the good catch of herring.

South Africa and South West Africa produced 275,200 metric tons (303,400 short tons) in January-October 1970—down 27 percent from 1969 and down 18 percent from the 1965-69 average for the 10-month period. This production was about 10 percent of the total FEO production—compared to 17.5 percent in 1969.

Table 9.--FEO 1/ and total world production of fish meal, January-October 1965-69 average, 1969, and 1970

Country	1965-69 average	1969	1970 2/	Percent of FEO production: 1965-69 average	1969	1970 2/
	Thousand metric tons			Percent		
Angola	44.9	70.0	3/46.0	2.0	3.3	1.7
Chile	128.6	122.2	118.1	5.8	5.7	4.4
Iceland	96.4	61.2	3/64.5	4.3	2.8	2.4
Norway	359.8	305.3	345.5	16.1	14.1	12.7
Peru	1,268.2	1,221.9	1,866.0	56.8	56.6	68.7
South Africa and South West Africa	335.2	377.4	275.2	15.0	17.5	10.1
Total FEO 4/	2,233.0	2,158.0	3/2,715.3	100.0	100.0	100.0
Total world 5/	2,784.8	2,755.8	3/3,274.2			
Percent FEO is of world				80.1	78.3	82.9

1/Fishmeal Exporters Organization.
2/Preliminary
3/Estimated.
4/Figures may not add to total because of rounding.
5/FEO countries plus Belgium, Canada, Denmark, France, Sweden, United Kingdom, United States, and West Germany

FEO Exports in January-October—Below the Year Before

The FEO member countries exported an estimated 2,158,200 metric tons (2,379,000 short tons) of fish meal in January-October 1970—down 3 percent from 1969 but up about 4 percent from the 1965-69 average exports for the 10-month period (tables 10 and 11). Exports from Peru and Iceland were higher in the first 10 months of 1970 than a year before, while exports of the other FEO member countries were below 1969.

Peru exported 1,611,300 metric tons (1,776,100 short tons) of fish meal in the first 10 months of 1970, 11 percent more than in 1969 and 23 percent more than Peru's average 1965-69 exports. Peru's exports were about 78 percent of the total FEO exports in January-October 1970. Norway's exports were down nearly one-fourth, and exports from South Africa and South West Africa were down about 37 percent from 1969 (table 11). The estimated exports from Angola were down 38 percent.

About 6.6 percent of the total FEO exports went to the United States in January-October—44 percent less than in 1969 The FEO exports to the United States in the first 10 months of 1965-69 averaged, however, nearly 19 percent of the total. As mentioned earlier, the high price of fish meal was the major reason for the reduced fish meal imports of the United States.

FEO fish meal exports to several other countries also declined from a year before. The notable reductions occurred in shipments to the United Kingdom, Sweden, Spain, Czechoslovakia, and the Netherlands (table 12). About 41 percent of the FEO exports went to the member countries of EEC (European Economic Community) in January-October 1970—compared to 39 percent in 1969. Well over half of the FEO exports to EEC countries went to West Germany. The FEO fish meal shipments to West Germany in January-October 1970 were up 5 percent from 1969 in spite of the high prices of fish meal.

West Germany was Peru's most important export market in January-October 1970. About 421,900 metric tons (465,000 short tons) or 26 percent of Peru's exports went to West Germany during the first 10 months of 1970—compared to 23 percent in 1969. The East European countries increased their importance as a market for Peruvian fish meal They took about 22 percent of Peruvian fish meal exports in January-October 1970—compared to 15 percent a year before. Yugoslavia received about 30 percent of the Peruvian fish meal exports to East European countries, more than double the amount received in January-October 1969.

Only 7.6 percent of Peru's exports went to the United States in January-October 1970, compared to about 13 percent in 1969 and a 1965-69 average of 21 percent.

Table 10.--Total FEO 1/ exports of fish meal, and FEO exports to the United States, by month, 1965-69 average, 1969, and 1970

Month	1965-69 average			1969			1970 2/		
	Total FEO exports	FEO exports to the United States 3/		Total FEO exports	FEO exports to the United States 3/		Total FEO exports	FEO exports to the United States 3/	
	Thousand metric tons		Percent	Thousand metric tons		Percent	Thousand metric tons		Percent
January	217.6	30.3	13.9	214.9	18.6	8.6	213.4	12.2	5.7
February	214.0	27.1	12.7	244.7	18.9	7.7	262.8	13.2	5.0
March	236.8	42.5	17.9	278.6	35.7	12.8	281.8	11.2	4.0
April	228.5	41.4	18.1	280.4	47.8	17.0	257.2	45.4	17.6
May	233.1	35.6	15.3	310.1	37.3	12.0	274.2	26.2	9.4
June	225.1	44.2	19.6	239.8	44.8	18.7	201.9	25.9	12.8
July	218.3	39.4	18.0	235.1	28.3	12.0	4/253.1	4.3	1.7
August	174.3	40.1	23.0	161.3	9.1	5.6	169.4	1.5	.9
September	158.8	24.2	15.2	119.1	.5	.4	4/133.4	1.7	1.3
October	170.9	23.0	13.5	148.1	10.1	6.8	4/110.5		
November	191.5	29.4	15.4	173.9	2.6	1.5			
December	227.5	36.2	15.9	154.3	6.1	4.0			
Total 5/	2,496.4	413.5	16.6	2,560.3	259.8	10.1			

1/Fishmeal Exporters Organization: members are those countries listed in table 9.
2/Preliminary.
3/Based on imports of fish meal from FEO countries as reported by the U.S. Department of Commerce, Bureau of the Census.
4/Estimated.
5/Figures may not add to total because of rounding

Table 11.--Total FEO 1/ exports of fish meal, and FEO exports to the United States, January-October, 1965-69 average, 1969, and 1970

Country	1965-69 average			1969			1970 2/		
	Total FEO exports	FEO exports to the United States 3/		Total FEO exports	FEO exports to the United States 3/		Total FEO exports	FEO exports to the United States 3/	
	Thousand metric tons		Percent	Thousand metric tons		Percent	Thousand metric tons		Percent
Angola	45.5	0.1	0.2	78.5	-	-	4/48.8	-	-
Chile	121.2	90.8	74.9	136.3	53.5	39.2	85.0	10.5	12.4
Iceland	93.4	-	-	56.7	-	-	59.2	-	-
Norway	278.6	25.2	9.0	250.4	6.0	2.4	188.5	8.3	4.4
Peru	1,310.9	275.5	21.0	1,448.6	191.6	13.2	1,611.3	122.7	7.6
South Africa and South West Africa	227.8	1.8	.8	261.6	-	-	165.3	-	-
Total 5/	2,077.4	393.4	18.9	2,232.1	251.1	11.2	2,158.2	141.5	6.6

1/Fishmeal Exporters Organization: members are those countries listed in the table.
2/Preliminary.
3/Based on imports of fish meal from FEO countries as reported by the U.S. Department of Commerce, Bureau of the Census.
4/Estimated.
5/Figures may not add to total because of rounding.

Table 12.--FEO 1/ exports of fish meal to EEC (European Economic Community), the United States, and other countries, January-October, 1968, 1969, and 1970

Country	FEO exports			Percent of FEO total exports		
	1968	1969	1970 2/	1968	1969	1970
	Thousand metric tons			Percent		
EEC						
Belgium	51.6	49.3	35.4	2.0	2.2	1.7
France	62.3	51.9	58.5	2.4	2.3	2.7
Germany, West	449.7	475.5	501.2	17.5	21.3	23.2
Italy	96.8	89.3	96.6	3.8	4.0	4.5
Netherlands	192.7	209.0	186.2	7.5	9.4	8.6
Total	(853.1)	(875.0)	(877.9)	(33.3)	(39.2)	(40.7)
United States	564.0	251.1	231.5	22.0	11.2	10.7
Other						
Australia	23.7	24.7	18.8	0.9	1.1	0.9
Czechoslovakia	35.7	27.6	15.9	1.4	1.2	.7
Finland	24.9	25.0	20.5	1.0	1.1	.9
Germany, East	77.3	65.1	84.6	3.0	2.9	3.9
Hungary	20.2	29.2	38.4	.8	1.3	1.8
Japan	117.1	85.4	85.4	4.6	3.8	4.0
Mexico	70.5	51.0	66.0	2.7	2.3	3.1
Poland	82.3	92.4	119.7	3.2	4.1	5.5
Spain	94.3	126.4	113.2	3.7	5.7	5.2
Sweden	46.4	51.9	25.0	1.8	2.3	1.2
United Kingdom	352.2	295.2	223.6	13.7	13.2	10.4
Venezuela	27.9	23.9	22.2	1.1	1.1	1.0
Yugoslavia	40.3	52.5	107.1	1.6	2.4	5.0
Other	133.4	155.7	108.4	5.2	7.0	5.0
Total 3/	(1,146.2)	(1,106.0)	(1,048.8)	(44.7)	(49.6)	(48.6)
Total	2,563.3	2,232.1	2,158.2	100.0	100.0	100.0

1/Fishmeal Exporters Organization.
2/Export figures for Angola and Iceland are estimates.
3/Figures may not add to total because of rounding.

FEO Fish Meal Stocks on November 1, 1970—More Than Double From a Year Before

The member countries of FEO held an estimated 750,900 metric tons (827,700 short tons) of fish meal on November 1 1970,—more than double the stocks held at the same time a year ago and up 33 percent from the 1965-69 average for that date (table 13 and fig. 6). Peru's stocks on November 1, 1970, were 540,100 metric tons (595,400 short tons)—more than four times larger than a year ago and up 81 percent from 1965-69 average for November 1. These were the highest stocks on record for this date. Norway's stocks were also high--up 74 percent from November 1, 1969. The high stocks in these countries were the result of excellent catches and high prices of fish meal, which have slowed sales. Chilean stocks were two and one-half times the stocks for the same date a year ago. The main reason for higher stocks in Chile was a notable decrease in exports in the first 10 months of 1970.

Also changed are the shares of various countries of total FEO stocks. Peru's stocks were about 72 percent of the total FEO stocks on November 1, 1970,—compared with 43 percent on the same date in 1969 (table 13). Norway held about 23 percent of the stocks—compared to about 33 percent a year before. The share of the holdings of South Africa and South West Africa was only 2 percent—compared to 19.5 percent at the same time in 1969. Also Angola's and Iceland's shares were below a year before.

Demand

Broiler Placements—Up 9 Percent From Last Year

About 2.56 billion broiler chicks were placed on farms in the leading broiler-producing States in the first 10 months of 1970 (table 14). This number is about 9 percent above the placements in January-October 1969 and about 17 percent more than the 1965-69 average for the same period. Broiler chick placements were at a record high level during January-July 1970 but have declined in recent months. This decline is partially a result of lower broiler prices and higher feed costs.

Prices paid for broilers at the farm declined from the high of 14.8 cents per pound at the beginning of the year to 12.8 cents per pound in October. The average price for January-October 1970 was 13.8 cents per pound—compared to 15.3 cents last year. Although relatively high broiler placements in the first 10 months of 1970 have provided a market for prepared feeds and the ingredients used in these feeds, apparent use of fish meal remained below the 1969 level. This was due to the high prices of fish meal compared to competing feed ingredients.

Soybean Meal Prices—Up From 1969

Soybean meal prices in 1970 averaged above the previous year. The price increase was due to a

Table 13.--FEO 1/ fish meal stocks held November 1, 1965-69 average, 1969, and 1970

Country	1965-69 average	1969	1970 2/	Percent of FEO total stocks: 1965-69 average	1969	1970 2/
	Thousand metric tons			Percent		
Angola	5.1	5.4	3/3.2	0.9	1.8	0.4
Chile	17.7	7.5	19.4	3.2	2.5	2.6
Iceland	22.0	1.9	2.6	3.9	.6	.4
Norway	148.8	98.7	3/171.5	26.4	32.7	22.8
Peru	299.0	129.3	540.1	53.1	42.9	71.9
South Africa and South West Africa	70.6	59.0	14.1	12.5	19.5	1.9
Total 4/	563.2	301.8	3/750.9	100.0	100.0	100.0

1/Fishmeal Exporters Organization: members are those countries listed in the table.
2/Preliminary.
3/Estimated.
4/Figures may not add to total because of rounding.

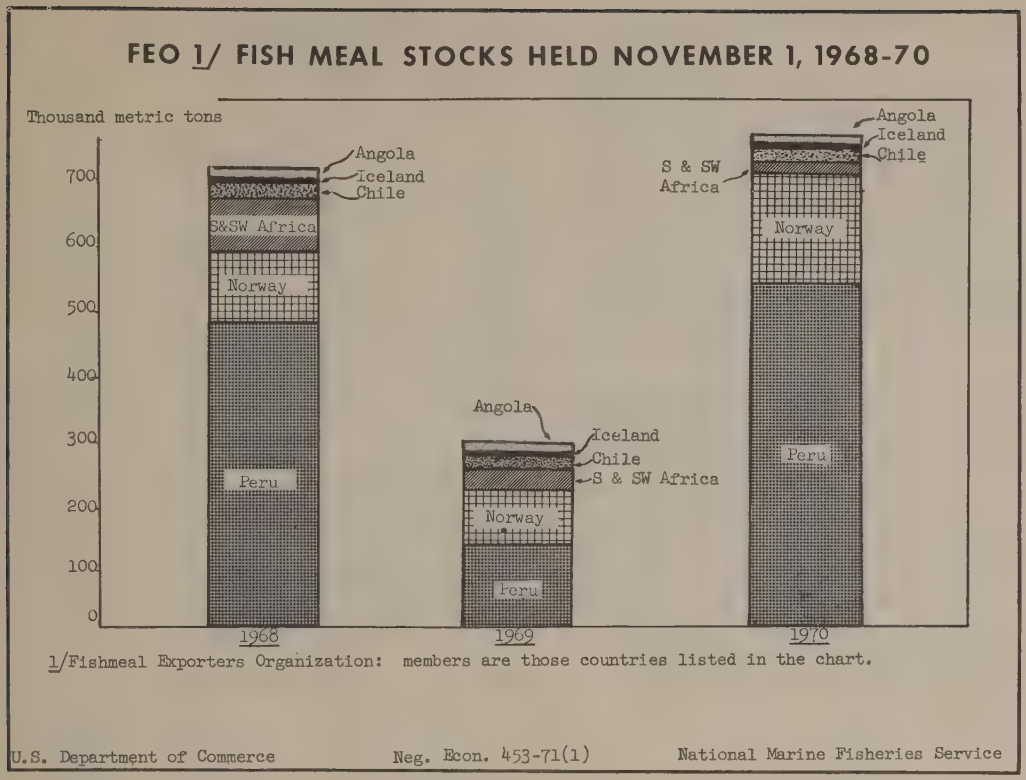

Figure 6

Table 14.--Broiler chick placements in 22 States, and average broiler price at the farm, by month, 1968-70

Month	1968		1969		1970 1/	
	Chicks placed	Broiler price	Chicks placed	Broiler price	Chicks placed	Broiler price
	Million	Cents/lb.	Million	Cents/lb.	Million	Cents/lb.
January	196.4	13.5	201.2	14.3	288.0	14.8
February	199.5	14.6	211.8	15.0	240.2	14.3
March	261.0	14.6	282.9	15.3	251.0	14.8
April	215.1	14.2	234.0	14.7	256.4	13.7
May	274.1	14.6	295.9	14.8	317.3	13.9
June	218.7	15.0	235.3	15.2	251.8	13.3
July	208.5	15.5	220.4	17.3	286.7	13.6
August	248.5	14.8	265.4	16.5	222.1	13.2
September	178.3	14.1	204.5	15.6	221.7	13.4
October	184.6	12.8	204.8	14.7	226.3	12.8
November	242.1	13.6	270.6	14.2		
December	194.8	13.4	219.4	13.5		
Total placements 2/ and average price 3/	2,621.7	14.1	2,846.2	15.2		

1/Preliminary.
2/Figures may not add to total because of rounding.
3/Weighted average.

Sources: Commercial Broilers: Annual Production and Weekly Placements, U.S. Department of Agriculture, Statistical Reporting Service, and Poultry and Egg Situation, U.S. Department of Agriculture, Economic Research Service.

strong demand for protein feeds in the United States and in Europe.

During the first half of the year, soybean meal prices fluctuated widely but then declined seasonally from the summer high (table 15). The average price of soybean meal (50 percent solvent) at Decatur, Ill., declined from $92.50 per ton in July and August to $82.50 per ton in November. The August price was $8.40 per ton more than in the same month last year, and the December price only $2.20 per ton less than the previous year's high of $90.40.

Even though soybean meal prices averaged higher than a year ago, a comparison with prices of fish meal indicates that soybean meal prices favored the use of this ingredient over fish meal. In 1970, the weighted average ratio between the prices of fish meal and soybean meal was 2.26 : 1—compared to 1.89 : 1 a year ago. The December ratio was 2.11 : 1. This ratio is somewhat lower than in December 1969, when fish meal was already noncompetitive, and U.S. imports were less than one-quarter of the 5-year average imports for the same month.

Table 15.--Average monthly price of soybean meal 1/ at Decatur, Ill., 1968-70

Month	1968	1969	1970
	Dollars per short ton		
January	81.30	79.50	97.60
February	80.20	78.40	95.60
March	80.40	80.10	79.60
April	80.90	81.30	83.10
May	81.90	84.90	78.90
June	89.10	88.20	82.70
July	92.00	86.20	92.50
August	94.50	84.10	92.50
September	95.50	82.70	88.20
October	85.30	82.10	83.80
November	79.40	76.90	82.50
December	79.40	90.40	88.20
Average 2/	85.00	82.90	87.10

1/50 percent protein, bulk.
2/Simple average.

Source: Feed Market News, U.S. Department of Agriculture, Consumer and Marketing Service, Grain Division.

Table 16.--Ratio of Peruvian fish meal price 1/ to soybean meal price 2/, by month, 1968-70

Month	1968	1969	1970
	Price ratio		
January	1.48	1.75	2.02
February	1.48	1.80	1.92
March	1.44	1.75	2.42
April	1.42	1.80	2.41
May	1.61	1.90	2.56
June	1.57	1.90	2.39
July	1.56	2.01	2.00
August	1.46	2.05	1.94
September	1.39	2.08	2.09
October	1.51	2.36	2.26
November	1.65	2.63	2.28
December	1.74	2.26	2.11
Average	1.54	1.89	2.26

1/F.o.b. East Coast ports for 65 percent protein meal, bagged, as quoted at New York City.
2/Wholesale at Decatur, Ill., for 50 percent solvent meal, bulk.

Prices

Prices of Fish Meal—Declined Slightly From the First Half of 1970

Average monthly prices of fish meal in July-December 1970 were slightly below the prices of the first half of the year. In April and May, the average price of bagged menhaden meal, as quoted by the brokers at New York City, reached the year's peak of $197.50 per ton, f.o.b. East Coast points. Prices dropped to $172.90 in August and increased again to $189.10 per ton in November. The December average price for menhaden meal was $187.50 per ton.

Towards the end of the year, average monthly prices of 60 percent tuna, mackerel, and anchovy meal, as quoted by brokers at Los Angeles, declined from the summer's high price of $180 per ton. The average monthly price in October was $162 per ton.

Price quotations for Peruvian fish meal by New York City brokers followed roughly the pattern of menhaden meal. Average monthly prices peaked in May at $202.10 per ton, f.o.b. East Coast ports and then declined to the August low of $179.10 per ton. Prices increased by $10.70 from August to October but then declined again. December average price for Peruvian fish meal was quoted at $186.40 per ton, f.o.b. East Coast ports.

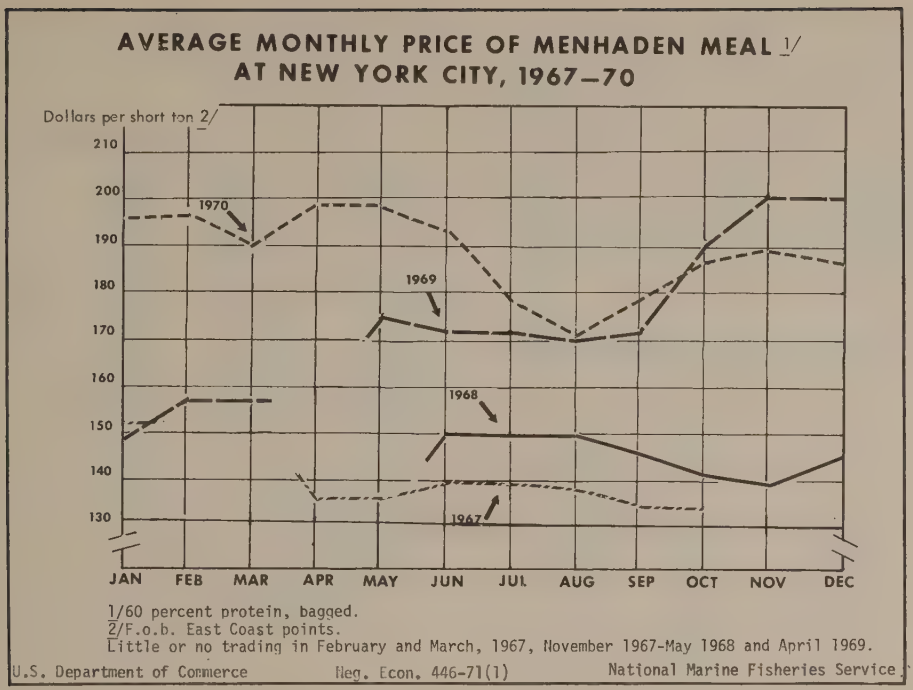

Figure 7

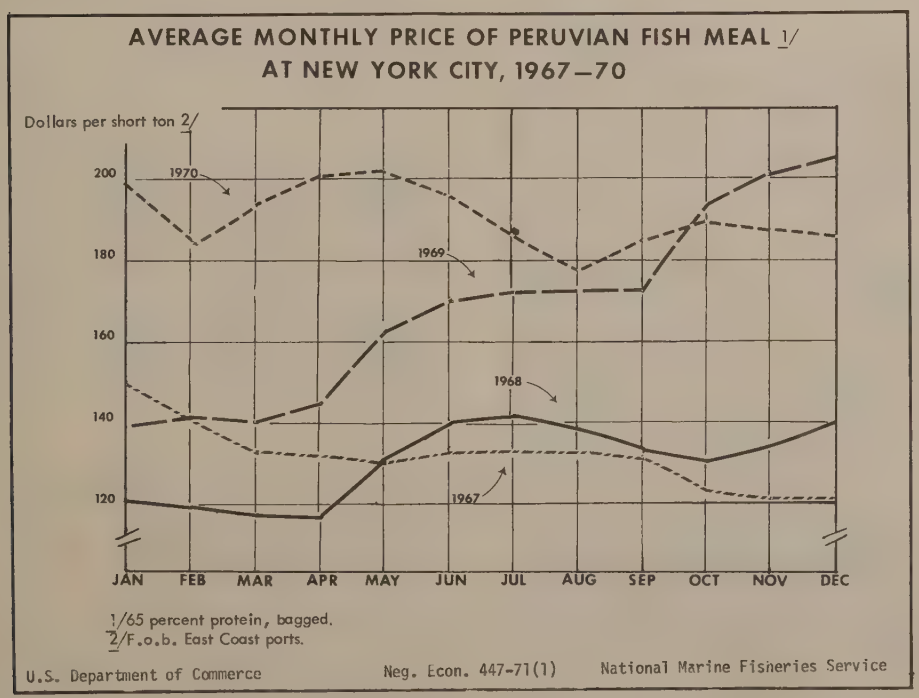

Figure 8

Fluctuations in the New York price quotations for Peruvian fish meal were probably caused by the unsettled and uncertain production and stocks situation. This uncertainty is also reflected in the lack of September-November quotations of the prices of Peruvian fish meal in Europe (table 20 and fig. 9). Exact price transactions are difficult to estimate when asking prices and bids are greatly different. Consequently, the European fish meal import market had little trading during the September-December period.

Table 17.--Average monthly price of menhaden meal 1/, f.o.b. East Coast and Gulf points, 1968-70

Month	1968	1969	1970
	- - -Dollars per short ton- - -		
January	2/131.00	149.25	195.90
February	2/131.00	153.00	196.50
March	2/131.00	153.00	189.90
April	2/131.00	2/154.00	197.50
May	2/131.00	174.00	197.50
June	149.00	172.60	193.80
July	149.65	171.90	179.00
August	149.00	168.90	172.90
September	145.00	171.60	177.80
October	141.60	189.30	187.50
November	140.50	200.10	189.10
December	145.10	199.25	187.50
Average 3/:	145.30	174.30	184.80

1/60 percent protein, bagged, as quoted by brokers at New York City.
2/Nominal price as presented in the Oil, Paint, and Drug Reporter.
3/Average weighted by monthly production of menhaden meal.

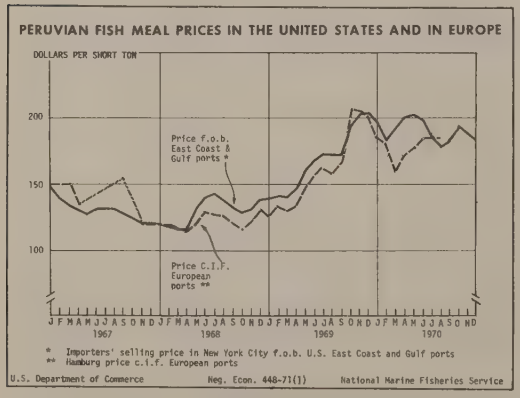
PERUVIAN FISH MEAL PRICES IN THE UNITED STATES AND IN EUROPE
DOLLARS PER SHORT TON
200
150
100
Price f.o.b. East Coast & Gulf ports *
Price C.I.F. European ports **
J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D
1967
1968
1969
1970
* Importers' selling price in New York City f.o.b. U.S. East Coast and Gulf ports
** Hamburg price c.i.f. European ports
U.S. Department of Commerce
Neg. Econ. 448-71(1)
National Marine Fisheries Service

Figure 9

Table 18.--Average monthly price of tuna and mackerel meal 1/ at Los Angeles, 1968-70

Month	1968	1969	1970
	- - -Dollars per short ton- - -		
January	123.00	132.60	172.50
February	124.80	135.00	172.50
March	124.80	133.80	177.00
April	115.50	127.80	2/178.50
May	117.00	138.60	2/180.00
June	121.50	145.80	2/180.00
July	127.50	147.00	2/180.00
August	132.00	147.00	2/168.00
September	132.00	150.00	2/165.00
October	132.00	168.00	2/162.00
November	132.00	177.00	
December	132.00	172.20	
Average 3/:	125.85	146.15	

1/60 percent protein, bagged, as quoted by brokers at Los Angeles.
2/Tuna, mackerel, and anchovy meal; April-August revised.
3/Average weighted by monthly production of tuna and mackerel meal.

Table 19.--Average monthly price of Peruvian fish meal 1/, f.o.b. East Coast ports, 1968-70

Month	1968	1969	1970
	- - -Dollars per short ton- - -		
January	120.20	139.50	197.50
February	119.00	141.00	183.50
March	116.00	140.50	192.70
April	115.20	146.80	200.50
May	131.90	161.00	202.10
June	140.00	168.00	197.80
July	143.20	173.50	185.80
August	137.90	172.10	179.10
September	132.75	172.00	184.60
October	129.20	193.40	189.80
November	131.00	202.40	187.80
December	138.10	204.00	186.40
Average 2/:	130.95	157.10	196.50

1/65 percent protein, bagged, as quoted by brokers at New York City.
2/Average weighted by monthly imports of Peruvian fish meal.

Table 20.--Average monthly prices of Peruvian fish meal 1/ in the United States, and in Europe, 1967-70

Year and location	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
	Dollars per short ton											
1967												
Price F.O.B. East Coast & Gulf Ports 2/	148.20	140.00	134.50	130.50	127.70	131.25	131.60	131.50	128.90	124.30	121.00	121.00
Price C.I.F European Ports	150.00	150.00	150.00	136.00	3/	3/	3/	3/	155.00	3/	120.00	120.00
1968												
Price F.O.B. East Coast & Gulf Ports 2/	120.20	119.00	116.00	115.20	131.90	140.00	143.20	137.90	132.75	129.20	131.00	138.10
Price C.I.F. European Ports	120.00	120.00	116.00	113.00	120.00	129.00	128.00	125.00	120.00	115.00	121.00	120.00
1969												
Price F.O.B. East Coast & Gulf Ports 2/	139.50	141.00	140.50	146.80	161.00	168.00	173.50	172.10	172.00	193.00	202.40	204.00
Price C.I.F. European Ports	125.00	134.00	130.00	133.00	149.00	157.00	162.00	158.00	166.00	207.00	205.00	201.00
1970												
Price F.O.B. East Coast & Gulf Ports 2/	197.50	183.50	192.70	200.50	202.10	197.00	185.80	179.10	184.60	189.80	187.80	186.40
Price C.I.F. European Ports	185.00	181.00	159.00	171.00	179 00	187.00	187.00	187.00	3/	3/	3/	

1/65 percent protein, bagged.
2/Importers' selling price in New York City F.O.B. United States East Coast and Gulf Ports.
3/Not quoted.

Source for European price: Foreign Agriculture Circular, U.S. Department of Agriculture, Foreign Agricultural Service.

OUTLOOK: JANUARY-MARCH 1971

The outlook of fish meal markets during the first quarter of 1971 depends largely on the actions of the Peruvian fish meal marketing company EPCHAP If EPCHAP continues to maintain high prices for fish meal, imports into the United States and Western Europe will be low and Peruvian fish meal inventories will continue to be high. If EPCHAP lowers their prices, utilization of fish meal will increase in Western Europe and in the United States.

Demand

As mentioned in the Review section, the number of broiler chicks placed on feed is an important indicator of potential demand for fish meal. According to USDA, broiler output during the first half of 1971 will probably be moderately below the first half of 1970. We estimate that about 740 million broilers will be placed on feed in the first quarter of 1971—5 percent less than the year before.

Prices of fish meal compared to competing ingredients, especially soybean meal, and also synthetics, such as lysine and methionine, influence the quantity of fish meal used. The average monthly prices of Peruvian fish meal in the United States were between $202.10 and $183.50 per ton in 1970-prices high enough to make synthetics competitive. The increase in the sales of methionine in 1970 compared to 1969 suggests that feed mixers have increasingly substituted synthetics for certain amino acids in fish meal.

In 1970, fish meal prices were high in relation to the major competing feed ingredient, soybean meal. The price ratio of Peruvian fish meal in New York City to soybean meal in Decatur, Ill., averaged 2.26 : 1 in 1970—compared to 1.89 : 1 in 1969. The ratio during the first two weeks in January 1971 was still relatively high, 2.15 : 1. If this ratio

continues, we expect the use of fish meal in the United States during the first quarter of this year to be less than in the 74,900 tons used during the first 3 months of 1970. If the ratio between the price of Peruvian fish meal and the price of soybean meal would decline during the rest of the first quarter, the United States' use of fish meal likely would increase.

Supply

Supplies of fish meal in the United States during the first quarter of 1971 will be still relatively low. We estimate that the domestic production in the first 3 months will be near last year's January-March production of 13,900 tons. U.S. production of fish meal in the November-December period 1970 was down about 14 percent from the same period of the previous year, and available meal at the beginning of 1971 was reported by a trade journal to be low because of low imports. First-quarter production in the United States is seasonally low and depends mainly on landings of tuna, mackerel, and anchovy. The California anchovy landings have been running about 7 percent above the previous season, but the fishery will be closed for February.

Prices of Peruvian fish meal, as quoted in New York City, were $184 to 188 per ton, and prices of menhaden meal were $185 to 188 per ton in the first week of January. If prices continue to be above $185 per ton, we expect U.S. fish meal imports to remain below last year's first quarter imports of 60,900 tons. The size of imports depends greatly on prices in Peru. The price of Peruvian fish meal will be influenced primarily by changes in the following factors:

1. Production of fish meal in Peru. The production for January-March will be reduced by the closure of the anchovy fishery for January and February

2. The possibility that the Peruvian Government wants to have an estimate of the size of 1971 anchovy year-class before making significant decisions on price. In March or April, scientists can estimate the size of this year-class.

3 The fish meal inventories in Peru. The estimated inventories approached a record 700,000 metric tons on January 1.

4 The success of the Peruvian fish meal marketing company EPCHAP in reducing the inventories during the closed fishing season. This factor determines the pressure of inventories on price when fishing resumes. Eastern European markets may have an important role in the success of EPCHAP. If the stocks are below 500,000 metric tons at the end of the closed season, the 1971 anchovy year-class will influence the prices. An inventory level of 500,000 to 700,000 metric tons would likely require an extension of closed season or a price decrease. If prices of fish meal should decline during the first quarter of this year, imports to the United States probably would increase.

Table 21.--Total fish solubles available in the United States: production plus imports, by month, 1968-70

Month	1968	1969 1/	1970 1/
	Thousand short tons		
January	0.6	0.6	1.3
February	.7	1.4	1.7
March	2.3	1.6	2.1
April	4.1	5.0	3.6
May	6.3	11.3	9.6
June	10.8	12.6	15.6
July	14.9	11.7	19.3
August	11.8	10.5	13.8
September	9.0	12.8	12.7
October	6.1	6.5	11.5
November	4.3	4.0	4.7
December	3.2	3.8	2.9
Total 2/	73.6	81.8	101.6

1/Preliminary.
2/Figures may not add to total because of rounding.

FISH SOLUBLES

REVIEW: JANUARY-OCTOBER 1970

Supply

Supplies of Fish Solubles—Up 23 Percent From 1969

Total U.S. supplies of fish solubles (excluding stocks, which are not reported) in January-October 1970 were about 91,100 tons—23 percent above the supplies of the same period in 1969 and about 20 percent more than the 1965-69 average (table 21). Nearly all of the U.S. supplies of fish solubles came from domestic production.

Production Up

The United States produced about 90,700 tons of fish solubles in the first 10 months of 1970—up about 23 percent from a year ago and up 19 percent from the most recent 5-year average. About 81 percent of the solubles were made from menhaden in the 10-month period—compared to about 78 percent last year. The Gulf Coast area produced 61 percent of the menhaden solubles.

Imports of Fish Solubles—424 Tons

About 424 tons of fish solubles were imported in January-October 1970. All the imports took place during the first 3 months of the year. A year ago, only 101 tons of fish solubles were imported during the first 10 months, whereas the most recent 5-year average imports of January-October were about 2,600 tons

Demand

Prices of menhaden solubles, as quoted by brokers in New York City were above the exceptionally low annual average of last year in each month except September. The May average of $54.70 per ton, f.o.b. Gulf Coast plants, was the highest. Prices increased slightly in October and November. The December average price was $49.70 per ton, $2.80 per ton below the price of the same month a year ago. Because the prices of fish solubles were quite attractive in comparison with competing feed ingredients in 1970, the apparent consumption of solubles increased above the previous year. In May and June demand was especially high and brought some relatively high prices during these months.

Table 22.--Average monthly price of menhaden solubles 1/, f.o.b. East Coast plants, 1968-70

Month	1968	1969	1970
	Dollars per short ton		
January	60.50	51.25	51.25
February	63.75	51.25	50.90
March	61.25	49.40	51.75
April	56.25	47.75	52.80
May	54.05	47.50	2/54.70
June	53.75	49.75	2/54.30
July	53.50	51.25	51.90
August	52.50	49.40	50.45
September	51.90	48.75	48.70
October	51.50	50.60	50.60
November	51.55	51.25	50.65
December	51.25	52.50	49.70
Average 3/	52.90	49.60	51.90

1/In tank cars; prices quoted by brokers at New York City.
2/F.o.b. Gulf Coast plants only.
3/Weighted average.

OUTLOOK: JANUARY-MARCH 1971

Demand

The margin between the price of menhaden meal and the price of menhaden solubles averaged $132.90 per ton in 1970—compared to $124.70 in 1969. These margins indicate that the price of fish solubles was more favorable for the use of solubles in feed rations in 1970 than in 1969. During the first 2 weeks of January 1971, menhaden solubles averaged $51.25 per ton thus making an average margin of $135.75 between the price of fish meal and the price of solubles. The high price of fish meal compared to solubles, makes solubles a good buy for use in animal feed rations. If the margin between menhaden meal and menhaden solubles continues at the same level through the rest of the first quarter as at the beginning of the year, feed mixers probably will use more fish solubles in animal feed ratios than last year in the first 3 months.

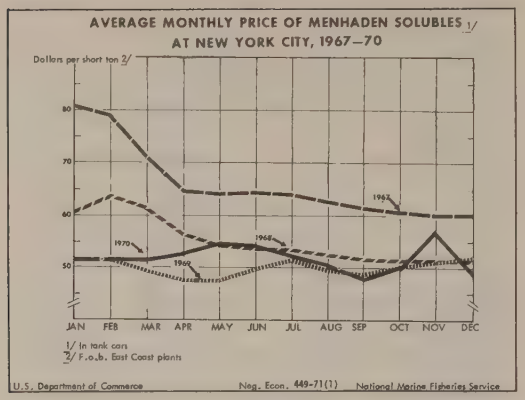

Figure 10

Supply

Since 1960, U.S. production of fish solubles has been between 2,700 and 6,800 tons in the first quarter. Because very little or no menhaden is landed during this period, the production of fish solubles depends on the landings of anchovy, tuna and mackerel. We expect the production of fish solubles to be about the same as the 4,700 tons produced in the first quarter last year. Because of seasonally low domestic production, some solubles will likely be imported during the first quarter of 1971. Nearly all the imports probably will come from Canada.

Table 23.--U.S. production of fish oil by month, 1968-70

Month	1968	1969	1970 1/
	Million pounds		
January	0.6	0.6	0.7
February	.3	.6	.5
March	.6	.6	.7
April	4.2	6.1	3.2
May	10.3	20.8	22.3
June	22.0	28.0	38.2
July	36.8	30.0	40.0
August	31.1	26.7	39.0
September	27.4	28.9	27.4
October	21.0	13.8	18.5
November	12.3	8.5	6.7
December	6.5	5.0	3.1
Total 2/	173.1	169.8	200.4

1/Preliminary.
2/Figures may not add to total because of rounding.

REVIEW: JANUARY-OCTOBER 1970

Supply

U.S. Production—Up 22 Percent From Last Year

The domestic industry produced an estimated 190.6 million pounds of fish oil in the first 10 months of 1970—up 22 percent from the year before and up 29 percent from the 1965-69 average for the January-October period (tables 23 and 24). These figures include a small amount of whale oil. About 92 percent of fish oil was made from menhaden in the 10-month period in 1970—compared to about 90 percent last year. The Gulf Coast area produced 81 percent of the menhaden oil.

About 6.1 million pounds of fish oil was made from anchovies and scrap from tuna and mackerel in January-October 1970—up about 9 percent from 1969 and up nearly 36 percent from the 1965-69 average for the January-October period. The increase is attributed to the heavier landings of California anchovies. The rest of the oil was made from alewives, groundfish, herring, and other unclassified species.

In November, the United States produced about 6.7 million pounds of fish oil—21 percent less than in November 1969.

U.S. Use of Fish Oil—Slightly Less Than Year Ago

The United States used 27.5 million pounds of fish oil in January-October 1970, mainly in paints for protective coatings and in production of fatty acids. This amount was about the same as the amount used in January-October 1969 and about 11 percent less than the 1965-69 average use in the same period (table 25). These figures do not include sperm oil.

Exports of Fish Oil Above Average

The United States exported 136 million pounds of fish oil in January-October 1970—about the same amount as a year ago but up about 62 percent from the 1965-69 average (tables 26 and 27). These high exports are a result of heavy European demand

Table 24.--U.S. production of fish oil by raw material source, January-October, 1965-69 average, 1969, and 1970

Source	1965-69 average	1969	1970 1/	Percent of total U.S. production: 1965-69 average	1969	1970
	Million pounds			Percent		
Menhaden	130.0	139.9	175.1	87.9	89.6	91.9
Tuna, mackerel, and anchovies	4.5	5.6	6.1	3.1	3.6	3.2
Unclassified	13.3	10.7	9.4	9.0	6.8	4.9
Total 2/	147.9	156.2	190.6	100.0	100.0	100.0

1/Preliminary.
2/Figures may not add to total because of rounding.

Table 25.--Industrial use of fish oil in the United States, by month, 1968-70 1/

Month	1968	1969	1970 2/
	Million pounds		
January	2.6	1.8	3.1
February	2.6	3.1	2.9
March	3.0	3.1	2.4
April	2.5	3.2	2.8
May	2.6	1.9	3.2
June	2.5	3.9	3.2
July	2.7	2.2	2.7
August	2.2	2.5	2.0
September	2.8	3.3	2.8
October	2.5	3.0	2.4
November	2.4	3.3	1.9
December	1.6	2.8	2.0
Total 3/	30.0	34.1	31.4

1/Includes mammal oil other than sperm oil, and includes some hydrogenated fats (vegetable and animal) and other fats and oils in process.
2/Preliminary.
3/Figures may not add to total because of rounding.

Table 26.--U.S. exports of fish oil by month, 1968-70

Month	1968	1969	1970 1/
	Million pounds		
January	0.9	4.0	11.1
February	6.0	8.9	.4
March	12.6	19.8	13.9
April	.1	21.1	4.3
May	2/	8.8	4.4
June	2/	15.5	2.4
July	.1	19.3	30.3
August	7.0	24.7	31.1
September	3.4	7.9	37.8
October	11.4	5.7	.2
November	1.8	33.3	17.9
December	21.8	27.0	
Total	65.1	196.1	

1/Preliminary.
2/Less than 50,000 pounds.

for all oils. About 49.8 million pounds, or nearly 37 percent of the total U.S. fish oil exports, went to the Netherlands in January-October 1970. This amount was down 37 percent from the previous year. Peru's fish oil exports to the Netherlands in 1970, however, were up 43 percent from 1969.

The second largest market for U.S. fish oil was Norway. About 36 million pounds, or 26.5 percent of the total U.S. exports of fish oil went to Norway, which is traditionally a net exporter of fish oil and did not receive any fish oil from the United States in 1969. One reason for the Norwegian imports is that in the first 10 months of 1970, Norway's fish oil production was about 12 percent below that of a year before.

About 17 million pounds or 12.5 percent of the January-October exports went to Sweden-compared to 7.6 percent a year before. The United States exported about 15 million pounds of fish oil to the United Kingdom in the first 10 months of 1970—more than twice as much as in 1969. This was mainly due to the drop of the United Kingdom's fish oil imports from Norway. West Germany received 8.5 million pounds of fish oil from the United States in January-October 1970—nearly the same amount as in 1969.

Nearly all of the fish oil exported by the United States was menhaden oil.

Table 27.--U.S. exports of fish oil by country of destination, January-October, 1965-69 average, 1969, and 1970

Country	1965-69 average	1969	1970 1/	Percent of total U.S. exports: 1965-69 average	1969	1970
	Million pounds			Percent		
Canada	1.1	1.2	1.0	1.3	0.9	0.7
Netherlands	31.6	79.0	49.8	37.8	58.2	36.6
Sweden	21.2	10.3	17.0	25.3	7.6	12.5
United Kingdom	7.0	6.3	14.7	8.4	4.6	10.8
Germany, West	8.8	8.8	8.5	10.5	6.5	6.3
Norway	3.3	-	36.0	3.9	-	26.5
Other	10.7	30.1	9.0	12.8	22.2	6.6
Total	83.7	135.7	136.0	100.0	100.0	100.0

1/Preliminary.

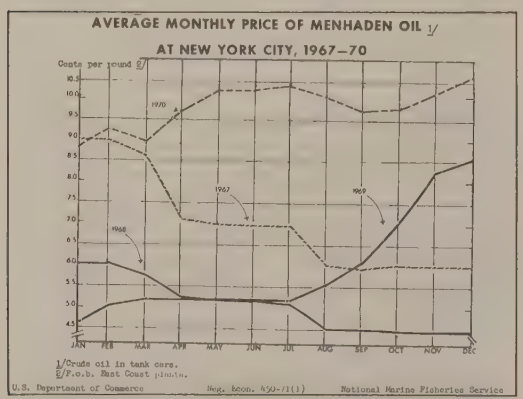
AVERAGE MONTHLY PRICE OF MENHADEN OIL 1/
AT NEW YORK CITY, 1967-70
Cents per pound 2/
1970
1967
1969
1968
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
1/Crude oil in tank cars.
2/F.o.b. East Coast plants.
U.S. Department of Commerce
National Marine Fisheries Service

Figure 11

Prices

Average Prices of Menhaden Oil—Record High

Prices of menhaden oil are influenced by the world market of oilseeds, oils, and fats. Not only does the world demand situation for industrial and edible oils affect the prices of fish oil, but also the supply of various competing oils. The major competitors for fish oil in the world market are edible oils, such as soybean, cottonseed, sunflower and industrial oils, such as linseed, tung, and tall. In addition, tallow is a competing product with fish oil.

Since the United States fish oil production is less than 10 percent of the total world fish oil production, prices of menhaden oil are closely dependent on the fish oil supplies of competing countries.

Table 28.--Average monthly price of menhaden oil 1/, f.o.b. East Coast plants, 1968-70

Month	1968	1969	1970
	Cents per pound		
January	6.00	4.70	8.75
February	6.10	5.00	2/9.25
March	5.75	5.20	3/8.90
April	5.35	5.30	3/9.70
May	5.25	5.25	3/10.30
June	5.25	5.20	10.30
July	4.85	5.25	10.40
August	4.55	5.65	10.20
September	4.40	6.10	9.70
October	4.45	6.75	9.75
November	4.40	8.20	10.10
December	4.40	8.50	10.60
Average 4/:	4.70	5.75	10.15

1/Crude oil in tank cars; prices quoted by brokers at New York City.
2/Asking price.
3/F.o.b, Gulf Coast plants.
4/Weighted average.

The average annual price of menhaden oil in 1970 was 10.15 cents per pound—a record high and nearly double the 1969 average price. The strong demand for fats and oils in Europe, in comparison to production, is the underlying factor for the high prices. The high-price policy of EPCHAP also had an influence on the high prices of menhaden oil.

Prices of menhaden oil, as quoted by brokers in New York City, increased in the first part of 1970. The January average price was 8.75 cents per pound and the July average of 10.4 cents per pound.

Prices declined in August and September in response to slackening demand for fish oil in Europe, but increased again near the end of the year. The December quotation for menhaden oil was 10.6 cents per pound—the highest monthly average on records of 18 years.

Because of high demand, the average monthly price of tuna and mackerel oil, as quoted by brokers at Los Angeles, increased steadily through 1970. The average price in January was 3.25 cents per pound, and the asking price in December 1970 was 6 cents per pound. This quotation was double the average price in December 1969.

Table 29.--Average monthly price of tuna and mackerel oil 1/ at Los Angeles, 1968-70

Month	1968	1969	1970
	Cents per pound		
January	3.50	3.25	3.25
February	3.25	3.10	3.50
March	3.25	3.00	3.65
April	3.25	3.00	4.10
May	3.25	3.00	4.70
June	3.25	3.00	4.75
July	3.25	3.00	4.75
August	3.25	3.10	4.95
September	3.25	3.25	5.25
October	3.25	3.25	5.25
November	3.25	3.00	5.50
December	3.25	3.00	6.00
Average 2/	3.25	3.10	4.95

1/Crude oil, f.o.b. plant; prices quoted by brokers at Los Angeles.
2/Weighted average

OUTLOOK: JANUARY-MARCH 1971

Demand

Industrial use of fish oil in the United States was 8.4 million pounds during the first quarter of 1970—an increase of 0.4 million pounds from the previous year after a steady decline since 1962. This increase occurred together with a notable price rise, thus indicating an increase in demand. A further increase of the price of menhaden oil in relation to the prices of competing industrial oils, however, reduced the use of fish oil near the end of 1970. Current ratios between the price of menhaden oil and the price of such competing oils as tung oil and linseed oil suggest that the domestic use of fish oil during the first quarter of 1971 will likely remain below the use of January-March a year ago.

U.S. exports of fish oil during the third quarter of 1970 were nearly double the exports a year before. Fourth quarter exports, however, did not reach the year-ago level. Fish oil prices in Europe strengthened during the fourth quarter. We do not have quotations for menhaden oil in Europe, but the price of Peruvian fish oil, c.i.f. European ports was about $273 per metric ton during the first half of January—compared to about $260 per metric ton in October 1970. The increased price of fish oil indicates strong demand in relation to production. Reduced availability of menhaden oil was a likely reason for the decreased exports during the third quarter. Menhaden landings in November and December were relatively poor. Therefore, it is likely that the quantity of U.S. fish oil exports to Europe during the first quarter of 1971 depends mainly on the available quantity of fish oil.

Supply

U.S. production of fish oil in the first quarter is usually very light, because the menhaden fishing season begins in April. We expect the production of fish oil during the first quarter of 1971 to be about the same as the 1.9 million pounds produced in the first quarter of last year. Most of this oil would come from tuna, mackerel, and anchovies.

THE VALUE OF PROCESSED MENHADEN

The total value of menhaden in the form of meal, solubles, and oil was an estimated $56 million in 1970—highest on record. This value was about 45 percent higher than the 1969 value and up about 54 percent from the 1961-69 average value. High landings of menhaden and higher prices for meal and oil were responsible for this record.

In 1970, an estimated 1,808 million pounds (904,000 short tons) of menhaden were landed in the United States—up about 19 percent from the previous year and up about 10 percent from the 1961-69 average. These landings were processed into 189,000 tons of fish meal, 77,000 tons of solubles, and 91,000 tons of menhaden oil (table 30).

The yield of meal, solubles, and oil per unit of menhaden raw material has a bearing on the value of menhaden. The average yields of fish meal and fish oil were slightly less in 1970 than their average yields in 1961-69. The 1970 yield of solubles was, however, above the 1961-69 average yield (table 31). The yield of meal from a ton of menhaden was 418 pounds (0.209 tons) in 1970, only slightly below the 1961-69 average of 420 pounds (0.210 tons). The menhaden oil yield was 200 pounds (0.100 tons) in 1970—compared to 1961-69 average of 204 pounds (0.102 tons). The oil yield depends mainly on the size (age) of fish. The smaller yield of menhaden oil in 1970 was due to a large amount of 1- and 2-year-old fish in the catch. The 1970 yield of solubles, 170 pounds (0.085 tons) per ton of raw fish, was greater than the 1961-69 average of 166 pounds (0.083 tons). The difference in the yield of solubles is mainly due to the differences in the solids content and variations of the amount of solubles added back to fish meal during processing.

In 1970, the average value of menhaden meal at the processing plant was estimated at $183.30 per ton, solubles $51.90 per ton, and oil $187.00 per ton. The corresponding 1969 values were $169.00 for meal, $49.50 for solubles, and $110.60 per ton for oil. Because of the record high prices of fish meal and fish oil in 1970, 1 ton of raw fish yielded an estimated $61.00 worth of processed products—compared to $50.50 worth in 1969 and $36.60 in 1961 (table 31). About 62 percent of the value of processed menhaden in 1970 was attributed to meal—compared to 70 percent a year before. Nearly 31 percent of the value came from oil—up considerably from 22 percent in 1969. The share of solubles in the value of processed menhaden was about 7 percent in 1970—compared to 8.1 percent in 1969 (fig. 12).

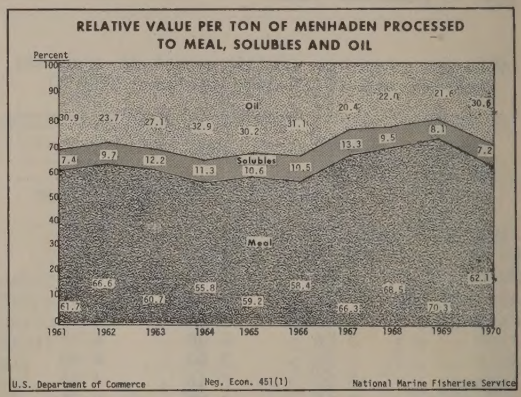

Figure 12

Table 30.-- Quantity and value of menhaden products, 1961-70

Product	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970 1/
						Thousand tons				
Fish meal	247.6	239.7	184.2	160.3	176.0	135.0	119.1	143.3	159.5	189.0
Fish solubles	73.3	85.2	74.8	68.7	73.2	60.8	51.8	53.2	63.3	77.0
Fish oil	121.5	120.2	83.8	78.8	87.6	72.1	50.7	76.0	74.6	91.0
						Million dollars				
Fish meal	25.9	28.2	22.3	20.0	25.9	20.5	15.3	19.5	27.0	34.6
Fish solubles	3.1	4.1	4.5	4.1	4.7	3.7	3.1	2.7	3.1	4.0
Fish oil	12.9	10.1	9.9	11.7	13.2	11.0	4.7	6.2	8.3	17.0
Total value 2/	41.9	42.4	36.6	35.8	43.8	35.2	23.1	28.5	38.3	55.6

1/ Estimated on the basis of January-November data.
2/ Figures may not add to total because of rounding.

Table 31.--Value per ton of menhaden processed to meal, solubles, and oil, 1961-70

Year	Yield	Meal value per ton	Menhaden value per ton	Yield	Solubles value per ton	Menhaden value per ton	Yield	Oil value per ton	Menhaden value per ton	Total Value per ton of menhaden
	Tons	Dollars	Dollars	Tons	Dollars	Dollars	Tons	Dollars	Dollars	Dollars
1961	0.216	104.40	22.60	0.064	42.90	2.70	0.106	107.00	11.30	36.60
1962	.215	117.90	25.30	.077	48.40	3.70	.108	83.70	9.00	38.00
1963	.206	120.90	24.90	.084	60.00	5.00	.094	117.70	11.10	41.00
1964	.209	124.80	26.10	.090	59.00	5.30	.103	149.90	15.40	46.80
1965	.197	147.00	29.00	.082	63.70	5.20	.098	151.20	14.80	49.00
1966	.212	152.10	32.20	.095	61.30	5.80	.113	159.30	17.10	55.10
1967	.210	128.20	26.90	.091	59.50	5.40	.089	93.40	8.30	40.60
1968	.213	136.30	29.00	.079	50.20	4.00	.113	82.20	9.30	42.30
1969	.210	169.00	35.50	.083	49.50	4.10	.098	110.60	10.90	50.50
1970 1/	.209	183.30	38.30	.085	51.90	4.40	.100	187.00	18.70	61.40

1/ Estimated on the basis of January-November data.

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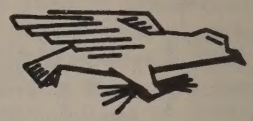

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